

Generation IV Program

Generation IV nuclear energy systems target significant advances over current-generation and evolutionary systems in the areas of sustainability, safety and reliability, and economics. These systems are to be deployable by 2030 in both industrialized and developing countries.

Development of Generation IV systems is an international initiative. A group of ten nations, including France, Japan, Russia, Korea, China, and Canada, are participating in the planning and development of Generation IV systems under the auspices of the Generation IV International Forum (GIF).

Recent fuel cycle studies highlight the importance of closed fuel cycle systems using fast-neutron reactors to meeting the Generation IV sustainability goals related to waste minimization, efficient resource utilization and proliferation resistance. It is envisioned that such systems will in the future be deployed in symbiosis with thermal reactor systems for sustainable generation of electricity and other energy products (e.g., hydrogen for use as transportation fuel). Research and development activities needed to support the design and eventual deployment of several promising systems are underway in the U.S. and other countries.



Next Generation Nuclear Plant

Argonne's Nuclear Engineering Division is actively participating in the development of Generation IV systems and their underlying technologies. Key areas of contribution include reactor physics, thermal-hydraulics, structural mechanics, safety, and fuel cycle technologies. Argonne also contributes to the technical leadership and coordination of the Generation IV initiative for the Department of Energy.

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